

REMARKS/ARGUMENTS

Claims 19-26 stand allowed.

Claims 38, 41, 42 and 44-49 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 38, 41, 42 and 44-49 have been so amended. Accordingly, Claims 38, 41, 42 and 44-49 stand allowable.

Claims 39, 40 and 43 stand rejected under 35 U.S.C. 112, second paragraph, and are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the rejections(s) under 35 U.S.C. 112, second paragraph, and to include all of the limitations of the base claim and any intervening claims. Claims 39, 40 and 43 have been so amended. Accordingly, Claims 39, 40 and 43 stand allowable.

1) Claim 28 stands rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 27 of U.S. Patent 6,629,223. Applicants respectfully traverse this rejection as set forth below.

In rejecting Claim 28 the Examiner has not appropriately compared Claim 28 of the present application with Claim 27 of U.S. Patent 6,629,223. The Examiner made the following determination:

Claim 27 of US Patent No. 6,629,223 contains EVERY element of claim 28 of the instant application and as such anticipates claim 28 of the instant application.

The Examiner has cited no case law or statutory authority that justifies the above determination. Case law requires that "all words in a claim must be considered in judging

the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). In the present situation, Claim 27 includes the additional limitations "... according to an internal clock signal" and "power distribution circuitry, coupled to a battery, for distributing power to the functional circuitry". The Examiner has not addressed the issue of why it would be obvious to one having ordinary skill in the art to remove these elements from Claim 27 of the reference to arrive at Claim 28 of the pending application. The Examiner has not considered ALL of the elements of the claims. As such, the Examiner has not established a prima facie case of obviousness-type double patenting for Claim 28.

2) Claims 28, 30-37 and 50-61 stand rejected under 35 U.S.C. 102(b) as being anticipated by Garde et al., US patent 5,685,005 and Garde, US Patent 5,396,608, which US patent 5,685,005 states is incorporated by reference. Applicants respectfully traverse this rejection, as set forth below.

In order that the rejection of Claims 28, 30-37 and 50-61 be sustainable, it is fundamental that "each and every element as set forth in the claim be found, either expressly or inherently described, in a single prior art reference." Verdegall Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also, Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), where the court states, "The identical invention must be shown in as complete detail as is contained in the ... claim".

Furthermore, "all words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Independent Claim 28 requires and positively recites an electronic system, comprising: "at least one input/output device" and "**an integrated circuit, coupled to the at**

least one input/output device and comprising: functional circuitry for executing logical operations upon digital data signals in a synchronous fashion and access circuitry coupled to a memory core in said integrated circuit for accessing said memory core more than once in a single clock cycle **wherein self-timing logic provides signals that facilitate said accessing**".

In contrast to the Examiner's determination that Garde discloses "at least one input/output device (14) and an integrated circuit (10) coupled to the at least one input/output device", the Garde reference actually teaches that I/O processor (14) is part of DSP (10) (see figure 1 & col. 2, lines 66 – col. 3, line 3) – NOT a separate part coupled to integrated circuit (10). As such, the Garde reference fails to teach "at least one input/output device" and "**an integrated circuit, coupled to the at least one input/output device ...**", as required by Claim 28.

Further, Applicants respectfully traverse the Examiner's determination that Garde's two phased clock signals are equivalent to "... **self-timing logic provides signals that facilitate said accessing**", as further required by Claim 28. In Garde, it is multiplexers 86 & 88 that facilitate accessing of the memory cores 28 and 30, respectively (col. 6, lines 15-17). There is no teaching in Garde that its phased clock signals are the signals that facilitate such accessing. As such, Garde fails to teach or suggest, "... **self-timing logic provides signals that facilitate said accessing**", as required by Claim 28. Accordingly, the 35 U.S.C. 102(b) rejection of Claim 28 is overcome.

Claims 30-36 stand allowable as depending from allowable Claim 28 and including further limitations not taught or suggested by the reference of record.

Regarding Claim 36, Applicants further traverse the Examiner's determination that Garde ('005) and Garde ('608) are properly regarded as a 102(b) reference. While Garde

(‘005) incorporates Garde (‘608) by reference and mentions that the reference discloses techniques for accessing variable length words in a memory array, there is no further teaching in Garde (‘005) that teaches or suggests a reason to substitute Garde (‘608)’s technique of accessing non-adjacent memory addresses for the adjacent memory addressing disclosed in Garde (‘005). As such, it is not proper to assert the two references as a single 35 U.S.C. 102(b) reference. In order that the rejection of Claim 36 be sustainable, it is fundamental that “each and every element as set forth in the claim be found, either expressly or inherently described, in a **single prior art reference**.” Verdegall Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also, Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), where the court states, “The identical invention must be shown in as complete detail as is contained in the ... claim”. Accordingly, the two reference 35 U.S.C. 102(b) rejection of Claim 36 is in error.

Independent Claim 37 requires and positively recites a memory module, comprising: “a memory interface unit”, “a memory core” and “circuitry for coupling said memory interface unit to said memory core **and enabling access to said memory core at least two times in a single clock cycle**”.

In contrast, Garde (‘005) discloses muxs (86) and (88) (which the Examiner equates to Applicants memory interface unit) which are coupled respectively to memory banks (28) and (30)(which the Examiner equates to Applicants memory core). While Garde (‘005) discloses a bus coupling mux (86) to memory bank (28) and a second bus coupling mux (88) to memory bank (30), there is no teaching or suggestion in Garde (‘005) that either one of these busses “...**enables access to said memory core at least two times in a single clock cycle**”, as required by Claim 37. Indeed, Garde actually discloses it is multiplexers 86 & 88 that facilitate accessing of the memory cores 28 and 30, respectively (col. 6, lines 15-17) – NOT the busses coupling multiplexer 86 and 88 to memory banks 28 and 30. As such, Garde fails to teach or suggest, ““circuitry for

coupling said memory interface unit to said memory core **and enabling access to said memory core at least two times in a single clock cycle**", as required by Claim 37. Applicants again point out that, "all words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Accordingly, the 35 U.S.C. 102(b) rejection of Claim 37 is overcome.

Claims 50 and 51 stand allowable as depending from allowable Claim 37 and including further limitations not taught or suggested by the reference of record.

Regarding Claim 51, Applicants further traverse the Examiner's determination that Garde ('005) and Garde ('608) are properly regarded as a 102(b) reference. While Garde ('005) incorporates Garde ('608) by reference and mentions that the reference discloses techniques for accessing variable length words in a memory array, there is no further teaching in Garde ('005) that teaches or suggests a reason to substitute Garde ('608)'s technique of accessing non-adjacent memory addresses for the adjacent memory addressing disclosed in Garde ('005). As such, it is not proper to assert the two references as a single 35 U.S.C. 102(b) reference. In order that the rejection of Claim 51 be sustainable, it is fundamental that "each and every element as set forth in the claim be found, either expressly or inherently described, in **a single prior art reference.**" Verdegall Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also, Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), where the court states, "The identical invention must be shown in as complete detail as is contained in the ... claim". Accordingly, the two reference 35 U.S.C. 102(b) rejection of Claim 51 is in error.

Independent Claim 52 requires and positively recites a processing apparatus, comprising: "a processing engine" and "a processor backplane coupled to said processing engine, said processor backplane comprising a memory module, said memory module,

comprising: a memory interface unit; a memory core; and circuitry for coupling said memory interface unit to said memory core **and enabling access to said memory core at least two times in a single clock cycle**".

In contrast, Garde ('005) discloses muxs (86) and (88) (which the Examiner equates to Applicants memory interface unit) which are coupled respectively to memory banks (28) and (30)(which the Examiner equates to Applicants memory core). While Garde ('005) discloses a bus coupling mux (86) to memory bank (28) and a second bus coupling mux (88) to memory bank (30), there is no teaching or suggestion in Garde ('005) that either one of these busses "...enables access to said memory core at least two times in a single clock cycle", as required by Claim 37. Indeed, Garde actually discloses it is multiplexers 86 & 88 that facilitate accessing of the memory cores 28 and 30, respectively (col. 6, lines 15-17) – NOT the busses coupling multiplexer 86 and 88 to memory banks 28 and 30. As such, Garde fails to teach or suggest, "circuitry for coupling said memory interface unit to said memory core **and enabling access to said memory core at least two times in a single clock cycle**", as required by Claim 52. Applicants again point out that, "all words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Accordingly, the 35 U.S.C. 102(b) rejection of Claim 52 is overcome.

Claims 53-61 stand allowable as depending (directly or indirectly) from allowable Claim 52 and including further limitations not taught or suggested by the reference of record.

Regarding Claim 61, Applicants further traverse the Examiner's determination that Garde ('005) and Garde ('608) are properly regarded as a 102(b) reference. While Garde ('005) incorporates Garde ('608) by reference and mentions that the reference discloses techniques for accessing variable length words in a memory array, there is no further

teaching in Garde ('005) that teaches or suggests a reason to substitute Garde ('608)'s technique of accessing non-adjacent memory addresses for the adjacent memory addressing disclosed in Garde ('005). As such, it is not proper to assert the two references as a single 35 U.S.C. 102(b) reference. In order that the rejection of Claim 61 be sustainable, it is fundamental that "each and every element as set forth in the claim be found, either expressly or inherently described, in a **single prior art reference.**" Verdegall Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also, Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), where the court states, "The identical invention must be shown in as complete detail as is contained in the ... claim". Accordingly, the two reference 35 U.S.C. 102(b) rejection of Claim 61 is in error.

3) Claim 29 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Garde et al., US patent 5,685,005 and Garde, US Patent 5,396,608. Applicants respectfully traverse this rejection, as set forth below.

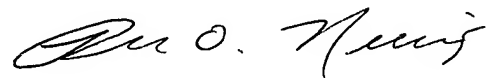
In proceedings before the Patent and Trademark Office, "the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art". In re Fritch, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (citing In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). "The Examiner can satisfy this burden **only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references**", In re Fritch, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992)(citing In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988)(citing In re Lulu, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)).

Claim 29 further defines the electronic system of Claim 28, wherein said electronic system is a cellular telephone.

In addition to the arguments made in support for the allowance of Claim 28, from which Claim 29 depends, Applicants point out that even if, *arguendo*, that DSPs are used in cellular phones, and contrary to the assertions of the Examiner to the contrary, the Examiner had cited no teaching or prior art that would lead one of ordinary skill in the art at the time of the invention to implement the electronic system of Claim 28 in a cellular telephone without the improper hindsight provided by Applicants' disclosure. The argument that one could have implemented the electronic system of Claim 28 in a cellular telephone because DSPs are useful is simply not sufficient to meet the requirements of a *prima facie* case of obviousness.

Claims 19-26 are allowed. Objected to Claims 38, 41, 42 and 44-49 has been amended to be allowable. Claims 39, 40 and 43 have been amended to overcome the 35 U.S.C. 112, second paragraph, rejection and to include all of the limitations of the base claim and any intervening claims. As such, Claims 39, 40 and 43 stand allowable. Rejected Claims 28-37, 39, 40, 43 and 50-61 stand allowable over the cited art for the reasons set forth above. Applicants respectfully request allowance of the application as the earliest possible date.

Respectfully submitted,



Ronald O. Neerings
Reg. No. 34,227
Attorney for Applicants

TEXAS INSTRUMENTS INCORPORATED
P.O. BOX 655474, M/S 3999
Dallas, Texas 75265
Phone: 972/917-5299
Fax: 972/917-4417